



Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 6

**Complete if Known**

|                        |                           |
|------------------------|---------------------------|
| Application Number     | 10/602,136                |
| Filing Date            | June 20, 2003             |
| First Named Inventor   | Sommadossi <i>et al.</i>  |
| Group Art Unit         | Unassigned                |
| Examiner Name          | Unassigned                |
| Attorney Docket Number | 06171.105074 IDX 1007 DIV |

3424454 2

**U.S. PATENT DOCUMENTS**

| Examiner<br>Initials * | Cite<br>No. <sup>1</sup> | U.S. Patent Document |                         | Name of Patentee or Applicant of Cited<br>Document | Date of Publication<br>of Cited Document<br>MM-DD-YYYY | Pgs, Clmns, Lns, Where<br>Relevant Passages/Relevant<br>Figs Appear |
|------------------------|--------------------------|----------------------|-------------------------|--|--|---|
|                        |                          | Number               | Kind Code<br>(if known) |  |  |   |
| PL                     | AA                       | 3,480,613            | A                       | Walton <i>et al.</i>                               | 11-25-1969   |   |
|                        | AB                       | 5,977,061            | A                       | De Clercq  | 11-02-1999   |   |
|                        | AC                       | 6,340,690            | B1                      | Bachand <i>et al.</i>                              | 01-22-2002   |   |
|                        | AD                       | 6,348,587            | B1                      | Schinazi <i>et al.</i>                             | 02-2002  |   |
|                        | AE                       | 6,395,716            | B1                      | Gosselin <i>et al.</i> (Novirio / Idenix)          | 05-28-2002   |   |
|                        | AF                       | 6,444,652            | B1                      | Gosselin <i>et al.</i> (Novirio / Idenix)          | 09-03-2002   |   |
|                        | AG                       | 6,573,248            | B1                      | Ramasamy <i>et al.</i>                             | 06-03-2003   |   |
|                        | AH                       | 2002/0019363         | A1                      | Ismaili <i>et al.</i>                              | 02-2002  |   |
|                        | AI                       | 2002/0055483         | A1                      | Watanabe <i>et al.</i>                             | 05-09-2002   |   |
|                        | AJ                       | 2002/0147160         | A1                      | Bhat <i>et al.</i>                                 | 10-10-2002   |   |
|                        | AK                       | 2003/008841          | A1                      | Devos <i>et al.</i>                                | 01-09-2003   |   |
|                        | AL                       | 2003/028013          | A1                      | Wang <i>et al.</i>                                 | 02-06-2003   |   |
|                        | AM                       | 2003/0050229         | A1                      | Sommadossi <i>et al.</i>                           | 03-13-2003   |   |
|                        | AN                       | 2003/0060400         | A1                      | LaColla <i>et al.</i>                              | 03-27-2003   |   |
| ✓                      | AO                       | 2003/0083307         | A1                      | Devos <i>et al.</i>                                | 05-01-2003   |   |
| PL                     | AP                       | 2003/0087873         | A1                      | Stuyver <i>et al.</i>                              | 05-08-2003   |   |

**FOREIGN PATENT DOCUMENTS**

| Examiner<br>Initials * | Cite<br>No. <sup>1</sup> | Foreign Patent Document |           |                                      | Name of Patentee or Applicant of<br>Cited Document | Date of<br>Publication of<br>Cited Document<br>MM-DD-YYYY | Pages, Columns,<br>Lines, Where Relevant<br>Passages or Relevant<br>Figures Appear | T <sup>6</sup> |
|------------------------|--------------------------|-------------------------|-----------|--------------------------------------|--|---|--|----------------|
|                        |                          | Office <sup>3</sup>     | Number    | Kind Code <sup>2</sup><br>(if known) |  |   |  |                |
| PL                     | AQ                       | FR                      | 1,521,076 | A                                    | Merck & Co. Inc.                                   | 04-12-1968  |  |                |
|                        | AR                       | FR                      | 1,581,628 | A                                    | Merck & Co. Inc.                                   | 09-19-1969  |  |                |
|                        | AS                       | FR                      | 2,662,165 | A                                    | Univ. Paris Curie                                  | 11-22-1991  |  |                |
|                        | AT                       | GB                      | 1,163,103 | A                                    | Merck & Co. Inc.                                   | 09-04-1969  |  |                |
|                        | AU                       | GB                      | 1,209,654 | A                                    | Merck & Co. Inc.                                   | 10-21-1970  |  |                |
|                        | AV                       | JP                      | 63-215694 | A                                    | Yamasa Shoyu Co. Ltd.                              | 09-08-1988  |  |                |
|                        | AW                       | JP                      | 06-228186 | A                                    | Yamasa Shoyu Co. Ltd.                              | 08-16-1994  |  |                |
|                        | AX                       | WO                      | 98/16184  | A2                                   | ICN Pharmaceuticals                                | 04-23-1998  |  |                |
|                        | AY                       | WO                      | 99/43691  | A1                                   | Emory U.; U.Ga.R.F.                                | 02-09-1999  |  |                |
| ✓                      | AZ                       | WO                      | 00/09531  | A2                                   | Novirio Pharm. (Idenix)                            | 02-24-2000  |  |                |
| PL                     | AAA                      | WO                      | 01/32153  | A2                                   | Biochem Pharma                                     | 05-10-2001  |  |                |

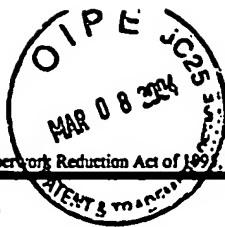
Examiner  
SignatureDate  
Considered

2-28-06

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 2 of 6

**Complete if Known**

|                        |                           |
|------------------------|---------------------------|
| Application Number     | 10/602,136                |
| Filing Date            | June 20, 2003             |
| First Named Inventor   | Sommadossi <i>et al.</i>  |
| Group Art Unit         | Unassigned                |
| Examiner Name          | Unassigned                |
| Attorney Docket Number | 06171.105074 IDX 1007 DIV |

3424454 2

**FOREIGN PATENT DOCUMENTS**

| Examiner<br>Initials * | Cite<br>No. <sup>1</sup> | Foreign Patent Document |           |                                      | Name of Patentee or Applicant of<br>Cited Document | Date of<br>Publication of<br>Cited Document<br>MM-DD-YYYY | Pages, Columns,<br>Lines, Where Relevant<br>Passages or Relevant<br>Figures Appear | T <sup>6</sup> |
|------------------------|--------------------------|-------------------------|-----------|--------------------------------------|--|---|--|----------------|
|                        |                          | Office <sup>3</sup>     | Number    | Kind Code <sup>2</sup><br>(if known) |  |   |  |                |
| PL                     | BA                       | WO                      | 01/60315  | A2                                   | Biochem Pharma                                     | 08-23-2001  |  |                |
|                        | BB                       | WO                      | 01/68663  | A1                                   | ICN Pharmaceuticals                                | 09-20-2001  |  |                |
|                        | BC                       | WO                      | 01/79246  | A2                                   | Pharmasset   | 10-25-2001  |  |                |
|                        | BD                       | WO                      | 01/90121  | A2                                   | Novirio Pharm. (Idenix)                            | 11-29-2001  |  |                |
|                        | BE                       | WO                      | 01/91737  | A2                                   | Novirio Pharm. (Idenix)                            | 06-12-2001  |  |                |
|                        | BF                       | WO                      | 01/92282  | A2                                   | Novirio Pharm. (Idenix)                            | 06-12-2001  |  |                |
|                        | BG                       | WO                      | 01/96353  | A2                                   | Novirio Pharm. (Idenix)                            | 12-20-2001  |  |                |
|                        | BH                       | WO                      | 02/03997  | A1                                   | ICN Pharmaceuticals                                | 01-17-2002  |  |                |
|                        | BI                       | WO                      | 02/18404  | A2                                   | F. Hoffmann-La Roche                               | 03-07-2002  |  |                |
|                        | BJ                       | WO                      | 02/32920  | A2                                   | Pharmasset   | 04-25-2002  |  |                |
|                        | BK                       | WO                      | 02/48165  | A2                                   | Pharmasset   | 06-20-2002  |  |                |
|                        | BL                       | WO                      | 02/057287 | A2                                   | Merck & Co. Inc.                                   | 07-25-2002  |  |                |
|                        | BM                       | WO                      | 02/057425 | A2                                   | Merck & Co. Inc.                                   | 07-25-2002  |  |                |
|                        | BN                       | WO                      | 02/070533 | A2                                   | Pharmasset   | 09-12-2002  |  |                |
|                        | BO                       | WO                      | 02/094289 | A1                                   | F. Hoffmann-La Roche                               | 11-28-2002  |  |                |
|                        | BP                       | WO                      | 02/100415 | A2                                   | F. Hoffmann-La Roche                               | 12-19-2002  |  |                |
|                        | BQ                       | WO                      | 03/026589 | A2                                   | Idenix; CNRS; U. Montp.                            | 04-03-2003  |  |                |
|                        | BR                       | WO                      | 03/026675 | A1                                   | Idenix; CNRS; U. Montp.                            | 04-03-2003  |  |                |
|                        | BS                       | WO                      | 03/051899 | A1                                   | Ribapharm  | 06-26-2003  |  |                |
|                        | BT                       | WO                      | 03/061385 | A1                                   | Ribapharm  | 07-31-2003  |  |                |
|                        | BU                       | WO                      | 03/061576 | A2                                   | Ribapharm  | 07-31-2003  |  |                |
|                        | BV                       | WO                      | 03/062255 | A2                                   | Ribapharm  | 07-31-2003  |  |                |
|                        | BW                       | WO                      | 03/062256 | A1                                   | Ribapharm  | 07-31-2003  |  |                |
|                        | BX                       | WO                      | 03/062257 | A1                                   | Ribapharm  | 07-31-2003  |  |                |
|                        | BY                       | WO                      | 03/063771 | A2                                   | Pharmasset   | 08-07-2003  |  |                |
|                        | BZ                       | WO                      | 03/068162 | A2                                   | Pharmasset   | 08-21-2003  |  |                |
|                        | BAA                      | WO                      | 03/072757 | A2                                   | Biota Inc.   | 09-04-2003  |  |                |
|                        | BAB                      | WO                      | 03/093290 | A2                                   | Genelabs Technologies                              | 11-13-2003  |  |                |
| Y                      | BAC                      | WO                      | 04/002422 | A2                                   | Idenix; Univ.D.S.Cagliari                          | 01-08-2004  |  |                |
| PL                     | BAD                      | WO                      | 04/002999 | A2                                   | Idenix; Univ.D.S.Cagliari                          | 01-08-2004  |  |                |

Examiner  
SignatureDate  
Considered

2-28-06

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



PTO/SB/08A (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet

3

of

6

**Complete if Known**

|                        |                           |
|------------------------|---------------------------|
| Application Number     | 10/602,136                |
| Filing Date            | June 20, 2003             |
| First Named Inventor   | Sommadossi <i>et al.</i>  |
| Group Art Unit         | Unassigned                |
| Examiner Name          | Unassigned                |
| Attorney Docket Number | 06171.105074 IDX 1007 DIV |

3424454 2

**OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS**

| Examiner Initials * | Cite No. <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.  | T <sup>6</sup> |
|---------------------|-----------------------|--|----------------|
| PL                  | CA                    | ALTMANN <i>et al.</i> , "The synthesis of 1'-methyl carbocyclic thymidine and its effect on nucleic acid duplex stability," <i>Synlett, Thieme Verlag, Stuttgart, De</i> , 10:853-855 (1994).  |                |
|                     | CB                    | BAGINSKI, S. G., <i>et al.</i> , "Mechanism of action of a pestivirus antiviral compound," <i>PNAS USA</i> , 97(14):7981-7986 (2000).  |                |
|                     | CC                    | BEIGELMAN, L.N., <i>et al.</i> , "Epimerization during the acetolysis of 3-O-acetyl-5-O-benzoyl-1,2-O-isopropylidene-3-C-methyl- $\alpha$ ,D-ribofuranose. Synthesis of 3'-C-methylnucleosides with the $\beta$ -D-ribo- and $\alpha$ -D-arabino configurations," <i>Carbohydrate Research</i> , 181:77-88 (1988). |                |
|                     | CD                    | BEIGELMAN, L.N., <i>et al.</i> , "A general method for synthesis of 3'-C-alkylnucleosides," <i>Nucleic Acids Symp. Ser.</i> , 9:115-118 (1981).  |                |
|                     | CE                    | BERENGUER, M., <i>et al.</i> , "Hepatitis B and C viruses: Molecular identification and targeted antiviral therapies," <i>Proceedings of the Association of American Physicians</i> , 110(2), 98-112 (1998).   |                |
|                     | CF                    | CARROLL, S.S., <i>et al.</i> , "Inhibition of hepatitis C virus RNA replication by 2'-modified nucleoside analogs," <i>The Journal of Biological Chemistry</i> , 278(14):11979-11984 (2003).   |                |
|                     | CG                    | CZERNECKI, S., <i>et al.</i> , "Synthesis of various 3'-branched 2',3'-unsaturated pyrimidine nucleosides as potential anti-HIV agents," <i>J. Org. Chem.</i> , 57:7325-7328 (1992).   |                |
|                     | CH                    | De FRANCESCO, R., <i>et al.</i> , "Approaching a new era for hepatitis C virus therapy: Inhibitors of the NS3-4A serine protease and the NS5B RNA-dependent RNA polymerase," <i>Antiviral Research</i> , 58:1-16 (2003).   |                |
|                     | CI                    | FAIVRE-BUET, V., <i>et al.</i> , "Synthesis of 1'-deoxy-psicofuranosyl-deoxynucleosides as potential anti-HIV agents," <i>Nucleosides &amp; Nucleotides</i> , 11(7):1411-1424 (1992).  |                |
|                     | CJ                    | FARKAS, J., <i>et al.</i> , "Nucleic acid components and their analogues. XCIV. Synthesis of 6-amino-9-(1-deoxy- $\beta$ -D-psicofuranosyl)purine", <i>Collect. Czech. Chem. Commun.</i> 32:2663-2667 (1967).  |                |
|                     | CK                    | FARKAS, J., <i>et al.</i> , "Nucleic acid components and their analogues. LXXIX. Synthesis of methyl 1-deoxy-D-psicofuranosides substituted at C <sub>(1)</sub> with halo atoms or a mercapto group," <i>Collect. Czech. Chem. Commun.</i> , 31:1535-1543 (1996).  |                |
|                     | CL                    | FEDOROV, I.I., <i>et al.</i> , "3'-C-Branched 2'-deoxy-5-methyluridines: Synthesis, enzyme inhibition, and antiviral properties," <i>J. Med. Chem.</i> , 35(24):4567-4575 (1992).  |                |
|                     | CM                    | FRANCHETTI, P., <i>et al.</i> , "2'-C-Methyl analogues of selective adenosine receptor agonists: synthesis and binding studies," <i>J. Med. Chem.</i> , 41(10):1708-1715 (1998).   |                |
| V                   | CN                    | GROUILLER, A., <i>et al.</i> , "Novel <i>p</i> -toluenesulfonylation and thionocarbonylation of unprotected thymine nucleosides," <i>Synlett</i> , 1993, 221-222 (March 1993).   |                |
| PL                  | CO                    | HARAGUCHI, K., <i>et al.</i> , "Preparation and reactions of 2'- and 3'- vinyl bromides of uracil nucleosides: Versatile synthons for anti-HIV agents," <i>Tetrahedron Letters</i> , 32(28):3391-3394 (1991).  |                |

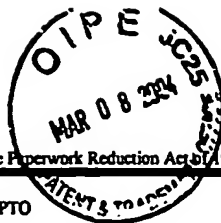
Examiner  
SignatureDate  
Considered

2-28-06

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Substitute for form 1449A/PTO

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

4

of

6

## Complete if Known

|                        |                           |
|------------------------|---------------------------|
| Application Number     | 10/602,136                |
| Filing Date            | June 20, 2003             |
| First Named Inventor   | Sommadossi <i>et al.</i>  |
| Group Art Unit         | Unassigned                |
| Examiner Name          | Unassigned                |
| Attorney Docket Number | 06171.105074 IDX 1007 DIV |

3424454 2

## OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

| Examiner Initials * | Cite No. <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.                       | T <sup>4</sup> |
|---------------------|-----------------------|---|----------------|
| PL                  | DA                    | HARAGUCHI, K., <i>et al.</i> , "Stereoselective synthesis of 1'-C-branched uracil nucleosides from uridine," <i>Nucleosides &amp; Nucleotides</i> , 14(3-5):417-420 (1995).   |                |
|                     | DB                    | HARRY-O'KURU, R.E., <i>et al.</i> , "A short, flexible route toward 2'-C-branched ribonucleosides", <i>J.Org. Chem.</i> , 62:1754-1759 (1997). (Scheme 11).   |                |
|                     | DC                    | HARRY-O'KURU, R.E., <i>et al.</i> , "2'-C-Alkylribonucleosides: Design, synthesis, and conformation," <i>Nucleosides &amp; Nucleotides</i> , 16(7-9):1457-1460 (1997). ["Rogers" in #2; correct name in #7]   |                |
|                     | DD                    | HATTORI, H., <i>et al.</i> , "Nucleosides and nucleotides. 175. Structural requirements of the sugar moiety for the antitumor activities of new nucleoside antimetabolites, 1-(3-C-ethynyl-b-D-ribo-pentofuranosyl)cytosine and -uracil," <i>J. Med. Chem.</i> , 41:2892-2902 (1998). |                |
|                     | DE                    | HREBABECKY, H., <i>et al.</i> , "Nucleic acid components and their analogues. CXLIX. Synthesis of pyrimidine nucleosides derived from 1-deoxy-D-psicose," <i>Collect. Czech. Chem. Commun.</i> , 37:2059-2065 (1972).   |                |
|                     | DF                    | HREBABECKY, H., <i>et al.</i> , "Synthesis of 7- and 9β-D-psicofuranosylguanine and their 1'-deoxy derivatives," <i>Collect. Czech. Chem. Commun.</i> , 39:2115-2123 (1974).  |                |
|                     | DG                    | IINO, T., <i>et al.</i> , "Nucleosides and nucleotides. 139. Stereoselective synthesis of (2'S)-2'-C-alkyl-2'-deoxyuridines," <i>Nucleosides and Nucleotides</i> , 15(1-3):169-181 (1996).  |                |
|                     | DH                    | ITOH, Y., <i>et al.</i> , "Divergent and stereocontrolled approach to the synthesis of uracil nucleosides branched at the anomeric position," <i>J. Org. Chem.</i> , 60(3):656-662 (1995).  |                |
|                     | DI                    | JOHNSON, C.R., <i>et al.</i> , "3'-C-Trifluoromethyl ribonucleosides," <i>Nucleosides &amp; Nucleotides</i> , 14(1&2):185-194 (1995).   |                |
|                     | DJ                    | KAWANA, M., <i>et al.</i> , "The deoxygenation of tosylated adenosine derivatives with Grignard reagents," <i>Nucleic Acids Symp. Ser.</i> , 17:37-40 (1986).   |                |
|                     | DK                    | LAVAIRE, S., <i>et al.</i> , "3'-Deoxy-3'-C-trifluoromethyl nucleosides: Synthesis and antiviral evaluation," <i>Nucleosides &amp; Nucleotides</i> , 17(12):2267-2280 (1998).   |                |
|                     | DL                    | LEYSEN, P. <i>et al.</i> , "Perspectives for the treatment of infections with <i>Flaviviridae</i> ," <i>Clinical Microbiology Reviews</i> (Washington, D.C.), 13(1):67-82 (January 2000).   |                |
|                     | DM                    | MARTIN, X., <i>et al.</i> , "Intramolecular hydrogen bonding in primary hydroxyl of thymine 1-(1-deoxy-β-D-psicofuranosyl) nucleoside," <i>Tetrahedron</i> , 50(22):6689-6694 (1994).   |                |
| ↓                   | DN                    | MATSUDA, A., <i>et al.</i> , "Radical deoxygenation of <u>tert</u> -alcohols in 2'-branched-chain sugar pyrimidine nucleosides: Synthesis and antileukemic activity of 2'-deoxy-2'(S)-methylcytidine," <i>Chem. Pharm. Bull.</i> , 35(9):3967-3970 (1987).                            |                |
| PL                  | DO                    | MATSUDA, A., <i>et al.</i> , "Alkyl addition reaction of pyrimidine 2'-ketonucleosides: Synthesis of 2'-branched-chain sugar pyrimidine nucleosides (Nucleosides and Nucleotides. LXXXI)," <i>Chem. Pharm. Bull.</i> , 36(3):945-953 (1988).  |                |

Examiner  
Signature

*[Signature]*

Date  
Considered

2-28-06

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet

5

of

6

**Complete if Known**

Application Number

10/602,136

Filing Date

June 20, 2003

First Named Inventor

Sommadosi *et al.*

Group Art Unit

Unassigned

Examiner Name

Unassigned

Attorney Docket Number

06171.105074 IDX 1007 DIV

3424454 2

**OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS**

| Examiner Initials * | Cite No. <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.   | T <sup>6</sup> |
|---------------------|-----------------------|---|----------------|
| PL                  | EA                    | MATSUDA, A., <i>et al.</i> , "Nucleosides and Nucleotides. 94. Radical deoxygenation of <i>tert</i> -alcohols in 1-(2-C-alkylpentofuranosyl)pyrimidines: Synthesis of (2' <i>S</i> )-2'-deoxy-2'-C-methylcytidine, an antileukemic nucleoside," <i>J. Med. Chem.</i> , 34:234-239 (1991).   |                |
|                     | EB                    | MATSUDA, A., <i>et al.</i> , "Nucleosides and Nucleotides. 104. Radical and palladium-catalyzed deoxygenation of the allylic alcohol systems in the sugar moiety of pyrimidine nucleosides," <i>Nucleosides &amp; Nucleotides</i> , 11(2/4):197-226 (1992).   |                |
|                     | EC                    | MIKHAILOV, S.N., <i>et al.</i> , "Synthesis and properties of 3'-C-methylnucleosides and their phosphoric esters," <i>Carbohydrate Research</i> , 124:75-96 (1983).   |                |
|                     | ED                    | MIKHAILOV, S.N., <i>et al.</i> , "Substrate properties of C'-methylnucleoside and C'-methyl-2'-deoxynucleoside 5'-triphosphates in RNA and DNA synthesis reactions catalysed by RNA and DNA polymerases," <i>Nucleosides &amp; Nucleotides</i> , 10(1-3):339-343 (1991).  |                |
|                     | EE                    | MIKHAILOV, S.N., <i>et al.</i> , "Hydrolysis of 2'- and 3'-C-methyluridine 2' <i>c</i> 3'-cyclic monophosphates and interconversion and dephosphorylation of the resulting 2'- and 3'-monophosphates: Comparison with the reactions of uridine monophosphates," <i>J. Org. Chem.</i> , 57 (15):4122-4126 (1992).                          |                |
|                     | EF                    | NUTT, R.F., <i>et al.</i> , "Branched-chain sugar nucleosides. III. 3'-C-methyladenine," <i>J. Org. Chem.</i> , 33:1789-1795 (1968).  |                |
|                     | EG                    | OIVANEN, M., <i>et al.</i> , "Additional evidence for the exceptional mechanism of the acid-catalyzed hydrolysis of 4-oxypyrimidine nucleosides: Hydrolysis of 1-(1-alkoxyalkyl)uracils, seconucleosides, 3'-C-alkyl nucleosides and nucleoside 3',5'-cyclic monophosphates," <i>J. Chem. Soc. Perkin Trans. 2</i> , 1994:309-314 (1994). |                |
|                     | EH                    | ONG, S.P., <i>et al.</i> , "Synthesis of 3'-C-methyladenosine and 3'-C-methyluridine diphosphates and their interaction with the ribonucleoside diphosphate reductase from <i>Corynebacterium nephridii</i> ," <i>Biochemistry</i> , 31(45):11210-11215 (1992).   |                |
|                     | EI                    | Oral Session V, Hepatitis C Virus, Flaviviridae; 16 <sup>th</sup> International Conference on Antiviral Research (April 27, 2003, Savannah, Ga.) p A75-77.  |                |
|                     | EJ                    | PAN-ZHOU, X-R, <i>et al.</i> , "Differential effects of antiretroviral nucleoside analogs on mitochondrial function in HepG2 cells," <i>Antimicrob. Agents Chemother.</i> , 44:496-503 (2000).  |                |
| V                   | EK                    | ROSENTHAL, A., <i>et al.</i> , "Branched-chain sugar nucleosides. Synthesis of 3'-C-ethyl (and 3'-C-butyl)uridine <i>Carbohydrate Research</i> , 79:235-242 (1980).   |                |
| PL                  | EL                    | SAMANO, V., <i>et al.</i> , "Synthesis and radical-induced ring-opening reactions of 2'-deoxyadenosine-2'-spirocyclopropane and its uridine analogue. Mechanistic probe for ribonucleotide reductases," <i>J. Am. Chem. Soc.</i> , 114:4007-4008 (1992).  |                |

Examiner  
SignatureDate  
Considered

2-28-06

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

|  |   |                          |                          |                        |                           |
|--|---|--------------------------|--------------------------|------------------------|---------------------------|
| Substitute for form 1449A/PTO<br><br><b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br><br>(use as many sheets as necessary) |   | <b>Complete if Known</b> |                          |                        |                           |
|  |   | Application Number       | 10/602,136               |                        |                           |
|  |   | Filing Date              | June 20, 2003            |                        |                           |
|  |   | First Named Inventor     | Sommadossi <i>et al.</i> |                        |                           |
|  |   | Group Art Unit           | Unassigned               |                        |                           |
|  |   | Examiner Name            | Unassigned               |                        |                           |
| Sheet  | 6 | of                       | 6                        | Attorney Docket Number | 06171.105074 IDX 1007 DIV |

3424454 2

| OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS |                       |  |                |
|---|-----------------------|--|----------------|
| Examiner Initials *                               | Cite No. <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.  | T <sup>4</sup> |
| PL  | FA                    | SAMANO, V., <i>et al.</i> , "Nucleic acid related compounds. 77. 2',3'-Didehydro-2',3'-dideoxy-2' (and 3')-methylnucleosides via [3,3]-sigmatropic rearrangements of 2' (and 3')-methylene-3' (and 2')-O-thiocarbonyl derivatives and radical reduction of a 2'-chloro-3'-methylene analogue," <i>Can. J. Chem.</i> , 71:186-191 (1993). |                |
|   | FB                    | SCHMIT, C., <i>et al.</i> , "The effects of 2'- and 3'-alkyl substituents on oligonucleotide hybridization and stability," <i>Biorganic &amp; Medicinal Chemistry Letters</i> , 4(16):1969-1974 (1994). ["Altmann"]  |                |
|   | FC                    | SERAFINOWSKI, P.J., <i>et al.</i> , "New method for the preparation of some 2'- and 3'-trifluoromethyl-2',3'-dideoxyuridine derivatives," <i>Tetrahedron</i> (Elsevier Science Publishers), 56(2):333-339 (1999).  |                |
|   | FD                    | SHARMA, P.K., <i>et al.</i> , "Synthesis of 3'-trifluoromethyl nucleosides as potential antiviral agents," <i>Nucleosides, Nucleotides and Nucleic Acids</i> , 19(4):757-774 (2000).   |                |
|   | FE                    | SOMMADOSSI J-P, <i>et al.</i> , "Comparison of cytotoxicity of the (-)- and (+)-enantiomer of 2',3'-dideoxy-3'-thiacytidine in normal human bone marrow progenitor cells" <i>Biochemical Pharmacology</i> , 44:1921-1925 (1992).   |                |
|   | FF                    | SOMMADOSSI J-P, <i>et al.</i> , "Toxicity of 3'-azido-3'-deoxythymidine and 9-(1,3-dihydroxy-2-propoxymethyl)guanine for normal human hematopoietic progenitor cells in vitro" <i>Antimicrobial Agents and Chemotherapy</i> , 31:452-454 (1987).   |                |
|   | FG                    | TRITSCH, D., <i>et al.</i> , "3'-β-ethynyl and 2'-deoxy-3'-β-ethynyl adenosines: First 3'-β-branched adenosines substrates of adenosine deaminase," <i>Bioorganic &amp; Medicinal Chemistry Letters</i> , 10:139-141 (2000).   |                |
|   | FH                    | TUNITSKAYA, V.L., <i>et al.</i> , "Substrate properties of C'-methyl UTP derivatives in T7 RNA polymerase reactions. Evidence for N-type NTP conformation," <i>FEBS Letters</i> , 400:263-266 (1997).  |                |
|   | FI                    | USUI, H., <i>et al.</i> , "Synthesis of 2'-deoxy-8,2'-ethanoadenosine and 3'-deoxy-8,3'-ethanoadenosine (Nucleosides and Nucleotides. LXIV)," <i>Chem. Pharm. Bull.</i> , 34(1):15-23 (1986).  |                |
|   | FJ                    | WALCZAK, K., <i>et al.</i> , "Synthesis of 1-(3-alkyl-2,3-dideoxy-D-pentofuranosyl)uracils with potential anti-HIV activity," <i>Acta Chemica Scand.</i> , 45:930-934 (1991).  |                |
|   | FK                    | WALTON, E., <i>et al.</i> , "Branched-chain sugar nucleosides. V. Synthesis and antiviral properties of several branched-chain sugar nucleotides," <i>J. Med. Chem.</i> , 12:306-309 (1969).   |                |
| ↓   | FL                    | WOLFE, M.S., <i>et al.</i> , "A concise synthesis of 2'-C-methylribonucleosides," <i>Tetrahedron Letters</i> , 36(42):7611-7614 (1995).  |                |
| PL  | FM                    | WU, J.-C., <i>et al.</i> , "A new stereospecific synthesis of [3.1.0] bicyclic cyclopropano analog of 2',3'-dideoxyuridine, <i>Tetrahedron</i> , 46(7):2587-2592 (1990).   |                |


|                    |   |                 |         |
|--------------------|---|-----------------|---------|
| Examiner Signature |  | Date Considered | 2-28-06 |
|--------------------|---|-----------------|---------|

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

PTO/SB/08A (08-00)

Please type a plus sign (+) inside this box → 

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

|  |   |    |   |                          |                           |
|--|---|----|---|--------------------------|---------------------------|
| Substitute for form 1449A/PTO<br><b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>(Use as many sheets as necessary) |   |    |   | <b>Complete if Known</b> |                           |
|  |   |    |   | Application Number       | 10/602,136                |
|  |   |    |   | Filing Date              | June 20, 2003             |
|  |   |    |   | First Named Inventor     | Sommadossi <i>et al.</i>  |
|  |   |    |   | Group Art Unit           | 1646                      |
|  |   |    |   | Examiner Name            | Patrick Lewis             |
| Sheet  | 1 | of | 2 | Attorney Docket Number   | 06171.105074 IDX 1007 DIV |

3405786 1

| U.S. PATENT DOCUMENTS  |                          |                      |                         |  |  |   |   |
|------------------------|--------------------------|----------------------|-------------------------|--|--|---|---|
| Examiner<br>Initials * | Cite<br>No. <sup>1</sup> | U.S. Patent Document |                         | Name of Patentee or Applicant of<br>Cited Document | Date of Publication<br>of Cited Document<br>MM-DD-YYYY | Pages, Columns, Lines,<br>Where Relevant<br>Passages/Relevant<br>Figures Appear | † |
|                        |                          | Number               | Kind Code<br>(if known) |  |  |   |   |
| PL                     | AA                       | 2002/0095033         |                         | Ramasamy <i>et al.</i>                             | 07-18-2002   |   |   |
|                        | AB                       | 6,495,677            |                         | Ramasamy <i>et al.</i>                             | 12-17-2002   |   |   |
|                        | AC                       | 2002/0198171         |                         | Schinazi <i>et al.</i>                             | 12-26-2002   |   |   |
|                        | AD                       | 2003/0083307         |                         | Devos <i>et al.</i>                                | 05-01-2003   |   |   |
|                        | AE                       | 2003/0225029         |                         | Stuyver <i>et al.</i>                              | 12-04-2003   |   |   |
|                        | AF                       | 6,660,721            |                         | Devos <i>et al.</i>                                | 12-09-2003   |   |   |
|                        | AG                       | 2003/0236216         |                         | Devos <i>et al.</i>                                | 12-25-2003   |   |   |
|                        | AH                       | 2004/0002476         |                         | Stuyver <i>et al.</i>                              | 01-01-2004   |   |   |
|                        | AI                       | 2004-0023921         |                         | Yao <i>et al.</i>                                  | 02-05-2004   |   |   |
|                        | AJ                       | 2004/0059104         |                         | Cook <i>et al.</i>                                 | 03-25-04   |   |   |
|                        | AK                       | 2004/0063658         |                         | Roberts <i>et al.</i>                              | 04-01-2004   |   |   |
|                        | AL                       | 2004/0067901         |                         | Bhat <i>et al.</i>                                 | 04-08-2004   |   |   |
|                        | AM                       | 2004/0072788         |                         | Bhat <i>et al.</i>                                 | 04-15-2004   |   |   |
|                        | AN                       | 2004/0110718         |                         | Devos <i>et al.</i>                                | 06-10-2004   |   |   |
|                        | AO                       | 2004/0110717         |                         | Bhat <i>et al.</i>                                 | 06-10-2004   |   |   |
|                        | AP                       | 2004/0121980         |                         | Martin <i>et al.</i>                               | 06-24-2004   |   |   |
|                        | AQ                       | 2004/0147464         |                         | Roberts <i>et al.</i>                              | 07-29-2004   |   |   |
|                        | AR                       | 6,777,395            |                         | Bhat <i>et al.</i>                                 | 08-17-04   |   |   |
|                        | AS                       | 6,784,166            |                         | Devos <i>et al.</i>                                | 08-31-2004   |   |   |
|                        | AT                       | 2004/0266722         |                         | Devos <i>et al.</i>                                | 12-30-2004   |   |   |
|                        | AU                       | 6,846,810            |                         | Martin <i>et al.</i>                               | 01-25-2005   |   |   |
| V                      | AV                       | 2005/0119200         |                         | Roberts <i>et al.</i>                              | 06-02-2005   |   |   |
| PL                     | AW                       | 6,911,424            |                         | Schinazi <i>et al.</i>                             | 06-28-2005   |   |   |

|                                  |   |                    |        |
|----------------------------------|---|--------------------|--------|
| 3995443<br>Examiner<br>Signature |  | Date<br>Considered | 3-2-06 |
|----------------------------------|---|--------------------|--------|

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231.



PTO/SB/08A (08-00)

Please type a plus sign (+) inside this box → ☐

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

|  |    |   |                        |                           |                          |
|--|----|---|------------------------|---------------------------|--------------------------|
| Substitute for form 1449A/PTO  |    |   |                        | <b>Complete if Known</b>  |                          |
| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br><i>(use as many sheets as necessary)</i> |    |   |                        | Application Number        | 10/602,136               |
|  |    |   |                        | Filing Date               | June 20, 2003            |
|  |    |   |                        | First Named Inventor      | Sommadossi <i>et al.</i> |
|  |    |   |                        | Group Art Unit            | 1646                     |
|  |    |   |                        | Examiner Name             | Patrick Lewis            |
| 2  | of | 2 | Attorney Docket Number | 06171.105074 IDX 1007 DIV |                          |

3405786\_1

| FOREIGN PATENT DOCUMENTS |                          |                         |           |                                      |  |   |  |                |
|--------------------------|--------------------------|-------------------------|-----------|--------------------------------------|--|---|--|----------------|
| Examiner<br>Initials *   | Cite<br>No. <sup>1</sup> | Foreign Patent Document |           |                                      | Name of Patentee or Applicant of<br>Cited Document | Date of<br>Publication of<br>Cited Document<br>MM-DD-YYYY | Pages, Columns, Lines,<br>Where Relevant<br>Passages/ Relevant<br>Figures Appear | T <sup>4</sup> |
|                          |                          | Office <sup>3</sup>     | Number    | Kind Code <sup>2</sup><br>(if known) |  |   |  |                |
| PL                       | BA                       | WO                      | 03/068164 | A2                                   | Stuyver <i>et al.</i>                              | 08-21-2003  |  |                |
|                          | BB                       | WO                      | 04/000858 | A2                                   | Carroll <i>et al.</i>                              | 12-31-2003  |  |                |
|                          | BC                       | WO                      | 04/028481 | A2                                   | Roberts <i>et al.</i>                              | 04-08-2004  |  |                |
|                          | BD                       | WO                      | 04/046159 | A1                                   | Martin <i>et al.</i>                               | 06-03-2004  |  |                |
|                          | BE                       | WO                      | 04/003138 | A2                                   | Olsen <i>et al.</i>                                | 01-08-2004  |  |                |
| V                        | BF                       | WO                      | 04/007512 | A2                                   | Bhat <i>et al.</i>                                 | 01-22-2004  |  |                |
| PL                       | BG                       | WO                      | 04/009020 | A2                                   | Olsen <i>et al.</i>                                | 01-29-2004  |  |                |

| OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS |                          |   |                |
|---|--------------------------|---|----------------|
| Examiner<br>Initials *                            | Cite<br>No. <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T <sup>4</sup> |
|   |                          |   |                |

|                       |   |                    |        |
|-----------------------|---|--------------------|--------|
| Examiner<br>Signature |  | Date<br>Considered | 3-3-06 |
|-----------------------|---|--------------------|--------|

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.